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CHAPTER IX

Somatic-Psychological Interaction in Physical and Mental Health

FRANKLIN C. SHONTZ

THE AREA of investigation implied by the title, "Somatic-Psychological Interaction in Physical and Mental Health," is extremely broad, and an accelerated interest in the subject has been shown by a wide variety of specialists both in medicine and in the behavioral sciences. Further, since the REVIEW has not previously devoted a special chapter to the question of somatic-psychological interaction in physical and mental health, the reviewer's task is doubly difficult, for the subject contains neither inherent nor previously established organization.

To overcome these difficulties, it has been necessary to limit the purposes of the present chapter and to adopt certain strategies of reference selection and classification. This chapter has therefore been designed to provide the reader only a broad introduction to the general field as well as sources that will guide his efforts to obtain more detailed and particularized information. Emphasis has been placed upon publications which review, summarize, or criticize research and theory on relevant subjects. Compendiums and symposiums have also been granted places of special importance. Specific research reports have been cited primarily to illustrate key issues or to exemplify techniques and important points of methodology. The reviewer has permitted himself latitude to make broad interpretive statements about general problems and trends, and thematic continuity has been provided by beginning with the basic issues of definition and by progressing to more specific fields of empirical investigation.

Basic Conceptual Problems

Soma and Psyche

According to many modern authorities, it is no longer possible to discuss the interaction of somatic and psychological events, for the ancient distinction between body and mind no longer exists. On the philosophical level, the metaphysical mind-body problem is said to have been laid to rest by Ryle (1949), who demonstrated the absurdity of seeking causal relations between these two entirely different logical categories. On the clinical level, the distinction between somatic and psychological events was obliterated by the psychobiological doctrine that since man is a unified whole he can be appreciated only as an organized totality.

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One form of response to these conceptual developments has been the institution of the large-scale team approach to psychosomatic research. This approach seeks to meet the demands of psychobiological doctrine by focusing the skills of a variety of highly trained specialists on a single research problem and integrating the findings of each specialist into an over-all explanation of organismic processes. Ruesch (1961) noted, however, that research of this type has not produced many truly causal, explanatory propositions for two reasons: First, every specialist on the team is confined to the verbal system of his own discipline. Second, it is not possible to integrate disparate semantic systems with logical consistency. Consequently, although modern research has effected the discovery of large numbers of transactional—that is, correlational—hypotheses, it has not explained the mechanisms that mediate between inner experience and bodily states.

The prominent philosopher of science, Feigl (1959), has suggested that the mind-body dilemma is not, in fact, dead. It has only been repressed; for, in various forms of more or less effective disguise, the distinction between soma and psyche continues to be employed and to influence man's views of himself.

For example, the mind-body distinction is implicit in White's (1956) opposition of the somatogenic and psychogenic hypotheses. The former postulates a physiological basis for behavioral disturbances and proposes that mental diseases are, in essence, disorders of the body. The latter postulates that behavioral disorders originate in emotional or ideational—that is, mental—processes that have become disordered through motivational conflict and subsequent anxiety. Neither hypothesis, taken in extreme form, asserts an actual interaction of mind and body; but both represent points of view toward which theories, however holistic in intention, tend to polarize.

Penfield and Roberts (1959) felt it necessary to accept the dualistic distinction between the brain, as a physical organ of the body, and the mind, as a psychological reality. They concluded that their work demanded the adoption of a kind of practical mind-brain interactionism which, despite its metaphysical deficiencies, remains at least consistent with the dictates of "busy common sense."

The functioning language of the study of the human being, which also remains markedly dualistic, strongly suggests the implicit belief that mind and body somehow interact upon each other. The phrase "psychosomatic medicine" continues to suggest that mental processes in some way bring about adverse physiological states, although both Hinkle (1961) and Wolff (1962), for example, concluded their studies with the argument that psychosomatic disease does not require a new or separate category of illness or of medicine. Similarly, the term "somatopsychology" proposed by Barker and others (1953), though focused upon the social psychology of physique and disability, seems to imply a concern with the direct influence of somatic states upon psychological events. This influence is implied despite the repeated finding reported by Wright (1960, pp. 373-77) that the phys-

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ical properties of disabilities are not reflected in any consistent fashion in the lives of those who possess them.

Current General Trends

Although science continues to employ language that implies a distinction between the events of the body and the events of experience, it is indeed a rarity to find this distinction openly accepted and promulgated in print. What has replaced the openly admitted mind-body dichotomy? Is it a truly useful conception of the person-as-a-totality? It is probably not.

If there is any general trend in recent years, it is toward a renewed interest in the somatogenic hypothesis as a counterbalance to the one-sided stress upon psychological determinants that have characterized behavioral science for at least two decades. This renewed interest derives support from many sources: e.g., the striking progress in research on brain functioning, the rapid proliferation of hallucinogenic and psychoactive drugs, and the significant advances in the construction of machines that closely parallel human activities in their behavior.

Bailey's (1960) views epitomize this trend. He attacked "psychodynamic" explanations of behavior as being the descendants of ancient ideas about the mystical concept of the soul. He contrasted these explanations with the modern "psychobiological" approach that in being essentially monistic deals solely with brain, not at all with mind, as a determinant of behavior. He stressed the advantages of a mechanistic concept of brain function and emphasized the superiority of this more nearly scientific approach over the theological thinking of the psychodynamicists.

Perhaps the revival, in some places, of an enthusiasm for rejecting psychological explanations in favor of mechanical or chemical analyses is but the beginning of a swing of history's pendulum. At least, it is now clear that the hegemony of the psychogenic hypothesis has been challenged and that any attempt to reinstate its supremacy will have to account for a far more sophisticated physical technology than existed in the early days of Sigmund Freud.

Additional References: Alexander (1962); Ciba Foundation (1958); Ehrentheil (1959); Featherstone and Simon (1959); Feibleman (1961); Hook (1960); Kubie (1960); Levin (1960); McCartan (1961); McGeer (1962); Spiegel (1957); Szasz (1960).

Reactions to Physical Illness and Stress

It is gratifying to note that philosophical confusion has not diminished productive empirical investigation. Since the relevant literature has been expanding rapidly, three broad content areas have been selected for special attention. First, there are the attempts to identify particular patterns of

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personality with particular disease entities or somatic states. Second, there are the efforts to deal with the longer range psychological problems that accrue to the person who has a permanent physical disability. Third, there exists considerable interest in reactions to crisis and stress that result either from the sudden realization of an illness or from the physiological changes it imposes.

Disease and Personality

Two general approaches characterize the study of this aspect of somatic-psychological interaction. The first seeks to identify common underlying personality traits or characteristics among persons with similar medical or somatic conditions. The second seeks a common physiological denominator among persons displaying the same behavioral or psychological abnormality.

Most characteristic of the first method are the attempts to validate the so-called specificity hypothesis by demonstrating that particular somatic pathologies occur in persons with uniquely identifiable personality traits. Examples of these efforts are afforded by the work of Fisher and Cleveland (1958), who felt that they had shown that different types of somatic pathologies are systematically associated with different kinds of responses to inkblots and that the "body image" (essentially psychological) plays an important role in determining the site at which pathological somatic conditions will occur. On the negative side of the ledger, Tizard (1962) reviewed the literature on the personality of epileptics and concluded that the evidence does not support the theory that all or most epileptics have a characteristic mode of adjustment. Cohen (1962) reviewed the literature on multiple sclerosis from 1950 to 1961 and concluded that research has failed to turn up evidence for the existence of a typical "MS personality." Paley, Nacman, and Dressler (1962) expressed the opinion that most of the personality features thought to be characteristic of tuberculous patients are a function of the kind of institutional treatment that these patients have customarily received.

The second method of approach may be exemplified by the work of Paffenbarger and others (1961). These investigators examined the medical records of all hospitals with psychiatric services in a large Midwestern community. Covering an 18-year span, they selected the records of those patients who manifested pregnancy-related psychotic disturbance. Analysis of these records led the authors to postulate that postpartum psychosis is probably of somatic, rather than "merely psychic," origin. Using similar methodology, Wertheimer (1961) conducted a survey of the medical records of 2,658 institutionalized subjects which led her to propose that a certain kind of schizophrenia is in reality a manifestation of rheumatic brain involvement.

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This second method of approach has received strong additional support from the recent successes of somatic treatments for behavioral disorders, since it is tempting to draw the (erroneous) inference that abnormal behavioral states that yield to somatic treatments must have a somatic cause. This chapter cannot consider this important problem in detail; however, the reader is referred to an excellent source by Kalinowsky and Hoch (1961), which reviews research in the area and notes that somatic treatments, valuable as empirical therapies but poorly understood, have not lived up to the claims originally made for them and have yet to shed new light on the etiology of mental disorder. Kety (1959a, b) reviewed much of the research on the bases and etiology of schizophrenia. He indicated that most of the claims of biochemical bases for schizoid personalities and behavior tend to be unsubstantiated when given further rigorous testing. He pointed out that much research in this field has been done without taking into consideration the dietary situations and general conditions surrounding psychotics in institutions. His major conclusions are that (a) many of the hypotheses being examined are worthy of further testing in rigorous settings, and (b) the combination of hereditary factors and socioenvironmental factors tends to offer promising leads.

It seems premature to presume that either of the two general methods of study outlined here has yet established a clear superiority over the other. Both customarily begin with the full complexity of clinical phenomena and seek to ferret out common underlying processes; hence both suffer from the uncertainties of control that are inevitable in this type of investigation. In both methods there is the danger of capitalizing on chance—that is, of claiming validity for findings that would not hold up in subsequent investigation. However, this danger could be overcome if research were more frequently repeated than is currently the practice. A greater danger lies in the possible temptation to identify correlation with cause. It is important that hypotheses based on clinical or epidemiological studies, such as those cited, be retested under rigidly controlled conditions so that causative inferences may be confirmed with some reasonable assurance of their correctness. The trouble is that few investigators ever seem to attempt this. Thus, suggestive evidence accumulates in great mounds while man's intellect apparently balks at the prospect of determining the certainty of the validity of one hypothesis before moving on to the generation of more.

Additional References: Brown (1958); Epstein (1961); Greenfield (1958); Kalis and others (1961); Klaber (1960); Simon, Herbert, and Straus (1961); Vernier, Stafford, and Krugman (1958); Weiss and Emmerich (1962).

Psychological Aspects of Disability

Two recent general texts cover quite thoroughly the field of psychological aspects of disability and serve as an excellent introduction to the interested

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reader. Wright (1960) dealt at length with the psychological aspects of disability. Her book possesses the continuity that can only appear in the work of a single author. Garrett and Levine (1962) edited a collection of papers that deals with a wide range of illnesses and disabilities. Each chapter was written by an expert in the particular subject covered by that chapter. Probably the books of both Wright and Garrett and Levine will become standard references in this field, and a familiarity with their contents puts one in a position to evaluate more critically specific research reports and published opinions.

A particularly competent investigation was recently reported by Cowen and others (1961), who examined with especially devised and selected instruments the adjustment problems of children with visual disabilities. These authors found no evidence of poorer adjustment among the visually disabled than among controls. There was, in fact, a tendency of better adjustment to occur in the home-living disabled group with greater visual involvement. In all groups, degree of maternal understanding of the child correlated positively with the child's level of adjustment. However, the degree of maternal understanding was not found to be related to the mothers' publicly expressed attitudes about child rearing.

Not all research in this field has been successful in providing information that can be accepted with confidence. A case in point is the study by Ryan (1961) of the dreams of 19 patients with paraplegia. Dreams appear to offer an excellent source of information about the problem of adjustment to disability, yet this study by Ryan is one of the very few on the subject. Unfortunately, no controls were used, and no allowance was made for possible rater bias. Dreams from the same person were treated as independent events, and no statistical analysis was employed. Hence, although this work can be considered suggestive of a potentially useful source of data, the author's conclusions about the psychological problems of his subjects cannot be considered acceptable until they are confirmed by more carefully controlled research.

The study of the psychological aspects of disability has long been closely connected with the field of vocational rehabilitation, as is evident in the volume edited by Wright (1959). Research in the area has frequently (and naïvely) identified therapeutic success with vocational accomplishment. Shontz and Fink (1961) proposed one method for evaluating the psychological success of rehabilitation with severely disabled persons, that is, those for whom vocational pursuits are unfeasible. The authors' technique, which utilized adjustment ratings made by medical personnel, is notable not for the newness of its approach but for its attempt to evaluate adjustment in terms other than those imposed by the "dollar criterion." It also typifies what seems to be an increasing effort to understand the person with a disability as a total person, not merely as a broken machine requiring mechanical repairs for the restoration of its economic usability.

The study of adjustment to disability has also been hampered by the lack of testable theory. It has been clinically recognized—as pointed out by

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Zane (1959)—that success in rehabilitation depends heavily upon the personality of the patient. Gelb (1961) noted that reaction to physical disability frequently serves as a camouflage for basically psychopathological processes. Weinstein and Kahn (1955) produced a classic study and analysis of the psychological mechanism of denial in persons with certain kinds of disabilities. Shontz (1962) observed that there seems to be a common process of adjustment to severe disability. Dembo, Leviton, and Wright (1956) described the problem of adjustment to disability in terms of reactions to loss and the misfortune phenomena; and Wright (1960) applied a consistent self-theory approach to the analysis of reactions to disability. It should be noted that none of these views is strongly buttressed by extensive bodies of theoretically derived empirical research. They constitute largely inferential, integrative summaries of existing knowledge, and few are so systematically stated as to generate readily testable, unequivocal hypotheses easily stated in operational terms.

However, the study of psychological aspects of disability has not been restricted to concern with global problems of personality. There has also been considerable interest in more specifically researchable problems. For example, a series of studies on the effects of hemiplegia upon perception has been reported by Birch and others (1960). These workers found in certain hemiplegic individuals consistent rotations of the visual field that might well influence responses to rehabilitative therapies such as ambulative training.

Attempts have also been made, usually with limited success, to show that somatic disabilities are represented in human figure drawings. The studies of Johnson and Wawrzaszek (1961) and of Schmidt and McGowan (1959) are typical. Fink and Shontz (1960) demonstrated that the body-part size judgments of older persons with chronic physical illnesses show significant constriction. Worchel (1962) conducted a careful investigation of space perception in the blind.

These researchers represent attacks upon problems that are readily amenable to empirical investigation. There exists, therefore, some evidence of a movement toward improved systematic statements and analyses of problems and toward increased sophistication of methodological approaches in this field of investigation, which is still in its beginning stages.

Additional References: Birch, Proctor, and Bortner (1961a, b); Birch and others (1960); Lebovits and Lakin (1957); Levi (1961); Levine (1960); Meyerson (1961); Mueller (1962); Myklebust (1960); Norris, Spaulding, and Brodie (1957); Riklan, Weiner, and Diller (1959); Shatin, Brown, and Loizeaux (1961); Shontz, Fink, and Hallenbeck (1960); Thume and Murphree (1961); Wachs and Zaks (1960).

Reactions to Stress

Research on this subject has been most generally characterized by an interest in establishing the truth of the dictum that stressful situations pro-

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duce untoward adaptive responses of widely varying kinds. Especially influential in arousing interest in this area was the now-classical work of Selye (1956), who discovered a common physiological pattern in a variety of responses to nonspecific somatic or psychological stress. An example of a typical recent study is afforded by the work of Roessler and Greenfield (1961), who compared the medical records of 471 college students receiving outpatient psychiatric care with those of 480 students selected at random. These authors concluded that the students under psychiatric treatment had experienced significantly more physical illnesses than the controls. Their data, of course, did not permit drawing causal inferences; they merely suggested that stress tends to be a function of the total person and to manifest itself in a variety of organismic disturbances.

Perhaps the most intensive investigation of psychological reactions to somatic crisis in the recent literature is the thorough study reported by Janis (1958), who investigated the significance and meaning of surgery. Janis concluded that the "work of worrying" is essential to adequate adaptation in surgical stress. Too much or too little anxiety is maladaptive; if anything, the latter is more violently disruptive of behavior than the former.

A related subject of considerable concern is the study of the experience of pain as it correlates with, or fails to correlate with, objective somatic damage. The most comprehensive publication in this area is undoubtedly the recent volume by Beecher (1959), who critically reviewed hundreds of articles on the subject and presented data exemplifying his own methodological approach. Beecher asserted that pain consists of at least two components, the physiological and the psychic. Of these, the latter is the more important, since it determines the degree of suffering in real, as opposed to laboratory, situations.

A rapid growth of interest in the phenomena associated with sensory deprivation has occurred during the past six years. An important research collection on this subject is presented in a volume edited by Solomon and others (1961). The relevance of these studies to the subject at hand becomes apparent when it is realized that more than one study on the disrupting effects of sensory isolation has used the iron lung as a nearly ready-made experimental cubicle. The investigation by Mendelson, Solomon, and Lindemann (1958) is representative. At least one author—notably, Rosenzweig (1959)—has argued that sensory deprivation produces "model" schizophrenics. Ziskind and others (1960) observed severe sensory and mental disturbances in patients wearing eye patches after surgery for cataract extraction or treatment for detachment of the retina.

Mention should be made of certain studies attempting to demonstrate that naturally occuring life events produce a variety of organismic disturbances. For example, interest has been shown in the study of pregnancy as a stressful situation. In a cross-sectional research, Grimm (1961) used projective devices to demonstrate that psychological tension in pregnant women tends to rise in the last half of the third trimester and that extreme tension

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correlates with a higher incidence of such undesirable outcomes of the pregnancy experience as high weight gain, prolonged second-stage labor, higher incidence of infant death, and deformity.

Research workers on such studies frequently comment upon the crudeness of their measures. Moveover, many designs lack adequate controls. Here, as elsewhere, there is always the possibility that somatic conditions predisposing to the occurence of the birth of a deformed child, for example, provide the basis for the psychological disturbances that anticipate the unfortunate event. A worker in this kind of research has to be especially careful not to permit a psychogenic or somatogenic bias to color his conclusions.

Finally, but by no means exhaustively, some recognition must be afforded the wide group of studies represented by those appearing in the volume edited by Uhr and Miller (1960) on the effects of psychoactive drugs as, broadly speaking, stress-inducing agents in nonpsychotic individuals. One such study, which is notable for its meticulousness, was recently reported by Hawkins and others (1961). This research utilized a complex, double-blind, double-Latin square design to study the effects of four active drugs and an inert control substance on 10 paid, volunteer subjects (advanced medical students). It was found that, except at high dosages and except for powerful drugs, individual personality differences in responsiveness were so marked as to mask specific drug action.

Mechanic (1962) and Szasz (1957) placed interpretive emphasis on social and interpersonal factors as critical in determining reactions to the drugs. Shapiro (1959) noted that the knowledge of the possibility that a placebo would be used probably has influenced results considerably in studies employing psychoactive drugs. The implications of this critique may be taken to reinforce Beecher's (1959) position that the laboratory situation cannot satisfactorily eliminate the real-life meanings that influence behavior, often more strongly than even grossly disturbed physiological states.

Additional References: Brady (1958); Davids, DeVault, and Talmadge (1961); Freedman and others (1961); Matarazzo, Matarazzo, and Saslow (1961); Meyer (1955); Murphy and others (1962 a, b); Stoller and Estess (1960); Titchener and Levine (1960).

Conclusion

A survey of the work on the subject of somatic-psychological interaction produces a general sense that a vast array of fascinating facts is being generated, but that no satisfactory unifying principles have emerged to tie these facts together into a meaningful theoretical conception of the human being. Ruesch's (1961) implied caution that the psychological realm and the somatic realm involve separate areas of discourse rings in one's ears again and again. Unfortunately, the literature has not yet produced a new

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kind of discourse that makes communication easier. The mind-body problem is as recalcitrant as it ever was, and it is all the more present in view of recent developments in research. It deserves to be unrepressed and brought to light once more, not with a view to solving it in any metaphysical sense but with a view to specifying the alternatives and their implications more clearly. In fact, there are as many potential integrations of these data as there are possible conceptual positions on which to take a stand. It would constitute considerably more than a mere intellectual exercise to attempt these integrations, for each could be made to bear real fruit in the form of organized and integrated research. Without such organization there can be no explanatory science of the human being.

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